

CLAIMS

What is claimed is:

- 1 1. A photosensor assembly, comprising:
 - 2 a first array of photosensor elements, each photosensor element in the
 - 3 first array having a first size;
 - 4 a second array of photosensor elements, each photosensor element in
 - 5 the second array having a second size, wherein the first size and second size are
 - 6 substantially different;
 - 7 a charge shift register; and
 - 8 both the first and second arrays of photosensor elements adapted to
 - 9 transfer charges to the charge shift register.
- 1 2. The photosensor assembly of claim 1, further comprising:
 - 2 a third array of photosensor elements;
 - 3 an overflow drain; and
 - 4 the third array, and one of the first and second arrays, adapted to
 - 5 transfer overflow charges to the overflow drain.
- 1 3. The photosensor assembly of claim 1, further comprising:
 - 2 at least one of the arrays of photosensor elements is arranged as first
 - 3 and second line arrays, on each side of a centerline, in a staggered pattern, such that a
 - 4 first photosensor in the first line array is offset in the direction of the centerline
 - 5 relative to a first photosensor in the second line array.

1 4. The photosensor assembly of claim 1, further comprising:

2 an overflow drain; at least one of the arrays of photosensor elements
3 is arranged as first and second line arrays, on each side of a centerline, in a
4 staggered pattern, such that a first photosensor in the first line array is offset
5 in the direction of the centerline relative to a first photosensor in the second
6 line array, and the first and second line arrays share the overflow drain.

1 5. The photosensor assembly of claim 1, further comprising:

2 first and second amplifiers; wherein the charge shift register shifts
3 charges from the first array of photosensor elements to the first amplifier or
4 the charge shift register shifts charges from the second array of photosensor
5 elements to the second amplifier.

1 6. The photosensor assembly of claim 5, wherein the first and second
2 amplifiers have substantially different gains.

1 7. A photosensor assembly, comprising:

2 a first array of photosensor elements, each photosensor element in the
3 first array having a first size;
4 a second array of photosensor elements, each photosensor element in
5 the second array having a second size, wherein the first size and second size are
6 different;

7 an overflow drain; and
8 the first and second arrays of photosensor elements adapted to transfer
9 overflow charges to the overflow drain.

1 8. A photosensor assembly, comprising:
2 six arrays of photosensors; and fewer than six charge shift registers
3 receiving charges from the arrays of photosensors.

1 9. The photosensor assembly of claim 8, wherein there are three charge shift
2 registers.

1 10. A photosensor assembly, comprising:
2 three arrays of photosensors;
3 three staggered line arrays of photosensors; and
4 fewer than nine charge shift registers receiving charges from the
5 arrays of photosensors and the staggered line arrays of photosensors.

1 11. The photosensor assembly of claim 10, further comprising: seven charge shift
2 registers receiving charges from the arrays of photosensors and the staggered line
3 arrays of photosensors.

1 12. The photosensor assembly of claim 10, further comprising: six charge shift
2 registers receiving charges from the arrays of photosensors and the staggered line
3 arrays of photosensors.

1 13. A photosensor assembly, comprising:

2 a first array of photosensors, arranged as first and second line arrays,

3 on each side of a centerline, in a staggered pattern, such that a first photosensor in

4 the first line array is offset in the direction of the centerline relative to a first

5 photosensor in the second line array;

6 a second array of photosensors, arranged as third and fourth line

7 arrays, on each side of a second centerline, in a staggered pattern, such that a first

8 photosensor in the third line array is offset in the direction of the second centerline

9 relative to a first photosensor in the fourth line array; and

10 the charge shift register receiving charges from the second line array

11 and from the third line array.

1 14. A method of scanning, comprising:

2 exposing a first array of photosensors to light;

3 exposing a second array of photosensors to light;

4 transferring charges from the first array of photosensors, to a charge

5 shift register, for a first optical sampling rate; and

6 transferring charges from the second array of photosensors, to the

7 charge shift register, for a second optical sampling rate.